UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 08/963,656 | 11/03/1997 | CRAIG J. GERARD | LKS9405A2Z | 1351 |

21005 7590 06/14/2004

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.
530 VIRGINIA ROAD
P.O. BOX 9133
CONCORD, MA 01742-9133

| EXAMINER | |
|---|---|
| MURPHY, JOSEPH F | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1646 | |

DATE MAILED: 06/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 08/963,656 | GERARD ET AL. | |
| | Examiner | Art Unit | |
| | Joseph F Murphy | 1646 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *08 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *151-153, 155-165, 167-175, 177-185, 187-194, 196-220, 246, 148-257, 259-266, 292-356* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *151-153,155-165,167-175,177-185,187-194,196-220,246,248-257,259-266 and 292-307* is/are allowed.

6)☒ Claim(s) *308-311,315-320,326-332,335-341 and 346-356* is/are rejected.

7)☒ Claim(s) *312-314, 321-325, 333-334, 342-345* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Formal Matters*

Claims 151-153, 155-165, 167-175, 177-185, 187-194, 196-220, 246, 148-257, 259-266, 292-356 are pending and under consideration.

### *Response to Amendment*

The rejection of claims 151-158, 160-166, 168-170, 172-176, 178-180, 182-189, 191-195, 197-199, 201-208, 210-220, 246-257, 253-261, 263-266, 292-299 under 35 U.S.C. 102(a) as being anticipated by WO 94/11504 (Horuk et al.), has been obviated by Applicant's amendment and is thus withdrawn.

The rejection of claims 167, 175-177, 179-180, 182-184, 187-189, 194-196, 206-208, 213-216, 246-248, 250-251, 253-261, 292-295 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 5,707,815 (Charo et al.), has been obviated by Applicant's amendment and is thus withdrawn.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 308-310, 313-315, 317-322, 325-327, 329-336, 338-343, 345-347, 349-356 stand rejected under 35 U.S.C. 102(a) as being anticipated by WO 94/11504 (Horuk et al.), for reasons of record set forth in the Office Action of 9/9/2003.

The rejection of record set forth that the reference of Horuk et al. teaches the cloning and expression of the C-C chemokine receptor (CKR-1) ('504 at 2). Horuk et al. teaches polyclonal antibodies to CKR-1 on page 39. Horuk et al. teaches monoclonal antibodies on page 40, as well as hybridoma production. Also disclosed are antibodies that antagonize CKR-1 activity or binding. The antibodies which bind CKR-1 would bind the amino acid sequence set forth in the instant application as SEQ ID NO: 4 (See Sequence Comparison A, attached) as well as to the amino acid sequence set forth in the instant application as SEQ ID NO: 6 (see Sequence Comparison B, attached). It is an inherent property of antibodies to CKR-1 to compete with antibodies to the amino acid sequence set forth as SEQ ID NO: 4 or 6, because they would be competing for the same binding site. The polynucleotide which encodes CKR-1 would hybridize under the conditions listed in the relevant claims to the nucleic acid of SEQ ID NO: 3 or 5. The CKR-1 polypeptide binds RANTES, and other C-C ligands, thus the claims are anticipated.

Applicant argues that independent claims 308, 320, 332, 341 and 353-356 recite that the antibody has binding specificity for a C-C chemokine receptor 3 protein that is expressed on the surface of a cell. However, while the claims recite that the protein is expressed on the surface of the cell, there is no limitation whereby antibody binding must be carried out while the receptor is actually in the cell membrane on the surface of the cell. For instance, the protein could very well be expressed and then isolated from the cell membrane, and in this instance, the antibody would

bind to the C-C chemokine receptor 3 protein, thus the claims are anticipated by the Horuk reference.

Claims 308-312, 314-315, 317-324, 326-327, 329-336, 338-344, 346-347, 349-353, 355 stand rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 5,707,815 (Charo et al.), for reasons of record set forth in the Office Action of 9/9/2003.

The rejection of record set forth that the '815 patent discloses human chemokine receptor proteins MCP-1RA and MCP-1RB, which are substantially free from other mammalian proteins with which they are typically found in their native state (column 3, lines 10-15). Also disclosed are antibodies to MCP-1RA and MCP-1RB (column 16, lines 15-18). The antibodies to MCP-1RA or B would bind the amino acid sequence set forth as SEQ ID NO: 2 in the instant application (see Sequence Comparison C, attached). The polynucleotide which encodes MCP-1RA or B would hybridize under the conditions listed in the relevant claims to the nucleic acid of SEQ ID NO: 3, thus the claims are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 5,707,815 are rejected.

Applicant argues that independent claims 308, 320, 332, 341 and 353-356 recite that the antibody has binding specificity for a C-C chemokine receptor 3 protein that is expressed on the surface of a cell. However, the claims recite that the protein is expressed on the surface of the cell, but there is no limitation that the antibody binding must be carried out while the receptor is present in the cell membrane on the surface of the cell. For instance, the protein could be

expressed and then isolated from the cell membrane. Subsequent to this isolation, the antibody would bind, thus the claims are anticipated by the '815 patent.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 308-311, 315-320, 326-332, 335-341, 346-356 stand rejected, under 35 U.S.C. 103(a) as being unpatentable over WO 94/11504 (Horuk et al.) in view of U.S. Patent No. 5,530,101 (Queen et al.), for reasons of record set forth in Paper No. 27, 10/8/2002, and the Office Action of 9/9/2003.

The rejection of record set forth that the reference of Horuk et al. teaches the cloning and expression of the C-C chemokine receptor (CKR-1) ('504 at 2). Horuk et al. teaches polyclonal antibodies to CKR-1 on page 39. Horuk et al. teaches monoclonal antibodies on page 40, as well as hybridoma production. Also disclosed are antibodies which antagonize CKR-1 activity or binding. The antibodies which bind CKR-1 would bind the amino acid sequence set forth in the instant application as SEQ ID NO: 4 (See Sequence Comparison A, attached) as well as to the amino acid sequence set forth in the instant application as SEQ ID NO: 6 (see Sequence Comparison B, attached). It would be an expected property of antibodies to CKR-1 to compete with antibodies to the amino acid sequence set forth as SEQ ID NO: 4 or 6, because they would be competing for the same binding site. The polynucleotide which encodes CKR-1 would hybridize under the conditions listed in the relevant claims to the nucleic acid of SEQ ID NO: 3

or 5. The CKR-1 polypeptide binds RANTES, and other C-C ligands. Horuk et al. does not teach humanized antibodies, chimeric antibodies or antigen-binding fragments.

U.S. Patent No. 5,530,101 teaches methods for preparing humanized immunoglobulin chains having generally one or more complementarity determiningregions (CDR's) from a donor immunoglobulin and a framework region from a human immunoglobulin. (column 2, lines 35-40). The '101 patent also teaches the immunoglobulins, including binding fragments and other immunoglobulin forms, of the present invention may be produced readily by a variety of recombinant DNA or other techniques. Preferably, polynucleotides encoding the desired amino acid sequences are produced synthetically and by joining appropriate nucleic acid sequences, with ultimate expression in transfected cells (column 3, lines 43-50). Thus, it would have been obvious to one of skill in the art at the time the invention was made to produce humanized or chimeric antibodies to the CKR-1 polypeptide, which would also bind the polypeptides disclosed as SEQ ID NO: 4 and 6. The motivation is provided in the '101 patent which discloses that there is a need for improved forms of human-like immunoglobulins specific for a predetermined antigen that are substantially non-immunogenic in humans, yet easily and economically produced in a manner suitable for therapeutic formulation and other uses (column 2 lines 25-32).

Applicant argues that independent claims 308, 320, 332, 341 and 353-356 recite that the antibody has binding specificity for a C-C chemokine receptor 3 protein that is expressed on the surface of a cell, and that the references do not teach an antibody or fragment that binds to C-C chemokine receptor 3 expressed on the surface of a cell. However, while the claims recite that the protein is expressed on the surface of the cell, there is no limitation that the antibody binding must be carried out while the receptor is in the cell membrane on the surface of the cell. For

instance, the protein could very well be expressed and then isolated from the cell membrane, and the antibody would bind, thus the claims are unpatentable over the references.

Claims 308-311, 315-320, 326-332, 335-341, 346-356 stand rejected, under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,707,815 (Charo et al.) in view of U.S. Patent No. 5,530,101 (Queen et al.), for reasons of record set forth in Paper No. 27, 10/8/2002, and the Office Action of 9/9/2003.

The rejection of record set forth that the '815 patent discloses human chemokine receptor proteins MCP-1RA and MCP-1RB, which are substantially free from other mammalian proteins with which they are typically found in their native state (column 3, lines 10-15). Also disclosed are antibodies to MCP-1RA and MCP-1RB (column 16, lines 15-18). The antibodies to MCP-1RA or B would bind the amino acid sequence set forth as SEQ ID NO: 2 in the instant application (see Sequence Comparison C, attached). The polynucleotide which encodes MCP-1RA or B would hybridize under the conditions listed in the relevant claims to the nucleic acid of SEQ ID NO: 3. The 815 patent does not teach humanized antibodies, chimeric antibodies or antigen-binding fragments.

U.S. Patent No. 5,530,101 teaches methods for preparing humanized immunoglobulin chains having generally one or more complementarity determining regions (CDR's) from a donor immunoglobulin and a framework region from a human immunoglobulin. (column 2, lines 35-40). The '101 patent also teaches the immunoglobulins, including binding fragments and other immunoglobulin forms, of the present invention may be produced readily by a variety of recombinant DNA or other techniques. Preferably, polynucleotides encoding the desired amino

acid sequences are produced synthetically and by joining appropriate nucleic acid sequences, with ultimate expression in transfected cells (column 3, lines 43-50). Thus, it would have been obvious to one of skill in the art at the time the invention was made to produce humanized or chimeric antibodies to the MCP1RA or B polypeptide which would also bind the polypeptide disclosed as SEQ ID NO: 2. The motivation is provided in the '101 patent which discloses that there is a need for improved forms of human-like immunoglobulins specific for a predetermined antigen that are substantially non-immunogenic in humans, yet easily and economically produced in a manner suitable for therapeutic formulation and other uses (column 2 lines 25-32).

Applicant argues that independent claims 308, 320, 332, 341 and 353-356 recite that the antibody has binding specificity for a C-C chemokine receptor 3 protein that is expressed on the surface of a cell, and that the references do not teach an antibody or fragment that binds to C-C chemokine receptor 3 expressed on the surface of a cell. However, while the claims recite that the protein is expressed on the surface of the cell, there is no limitation that the antibody binding must be carried out while the receptor is in the cell membrane on the surface of the cell. For instance, the protein could very well be expressed and then isolated from the cell membrane, and the antibody would bind, thus the claims are unpatentable over the references.

Claims 151-153, 155-165, 167-175, 177-185, 187-194, 196-220, 246, 248-257, 259-266, 292-307 are allowable.

Claims 308-311, 315-320, 326-332, 335-341, 346-356 are rejected.

Claims 312-314, 321-325, 333-334, 342-345 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Advisory Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Murphy whose telephone number is (571) 272-0877. The examiner can normally be reached Monday through Friday from 7:30 am to 5:00 pm. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Kunz can be reached on (571) 272-0887.

The fax number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Joseph F. Murphy, Ph. D.
Patent Examiner
Art Unit 1646
June 9, 2004

ELIZABETH KEMMERER
PRIMARY EXAMINER